S.No: 23	Exp. Name: *Write a C program to find the Addition of Two matrices by checking compatibility*	Date:2023-01-25

Aim:

Write a program to find the addition of two matrices.

Note :
- Do use the **printf()** function with a **newline** character (\n).
- If the sizes of two matrices are not equal then print **Addition is not possible** and stop the process.

Source Code:

Program511.c

```c
#include<stdio.h>
int main()
{
    int r1,c1,r2,c2,a[100][100],b[100][100],sum[100][100],i,j;
    printf("Size of mat1: ");
    scanf("%d%d",&r1,&c1);
    printf("mat1: ",r1*c1);
    for(i=0;i<r1;++i)
    for(j=0;j<c1;++j)
    scanf("%d",&a[i][j]);
    printf("Size of mat2: ");
    scanf("%d%d",&r2,&c2);
    printf("mat2: ",r2*c2);
    for(i=0;i<r2;++i)
    for(j=0;j<c2;++j)
    scanf("%d",&b[i][j]);
    if(r1==r2&&c1==c2)
    {
        for(i=0;i<r1;++i)
        for(j=0;j<c1;++j)
        sum[i][j]=a[i][j]+b[i][j];
        printf("mat1\n");
        for(i=0;i<r1;++i)
        {
            for(j=0;j<c1;++j)
            {
                printf("%d ",a[i][j]);
            }
            printf("\n");
        }
        printf("mat2\n");
        for(i=0;i<r2;i++)
        {
            for(j=0;j<c2;j++)
            {
                printf("%d ",b[i][j]);
            }
            printf("\n");
        }
        printf("Addition\n");
        for(i=0;i<r1;i++)
        {
```

```
            for(j=0;j<c1;j++)
            {
                printf("%d ",sum[i][j]);
            }
            printf("\n");
        }}
        else
        {
            printf("mat1\n");
            for(i=0;i<r1;++i)
            {
                for(j=0;j<c1;++j)
                {
                    printf("%d ",a[i][j]);
                }
                printf("\n");
            }
            printf("mat2\n");
            for(i=0;i<r2;i++)
            {
                for(j=0;j<c2;j++)
                {
                    printf("%d ",b[i][j]);
                }
                printf("\n");
            }
            printf("Addition is not possible\n");
        }
        return 0;
    }
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Size of mat1: 2 2
mat1: 11 22 33 44
Size of mat2: 2 2
mat2: 22 33 44 55
mat1
11 22
33 44
mat2
22 33
44 55
Addition
33 55
77 99

Test Case - 2
User Output
Size of mat1: 2 3
mat1: 1 2 3 4 5 6

Size of mat2: 3 2
mat2: 1 3 4 5 6 7
mat1
1 2 3
4 5 6
mat2
1 3
4 5
6 7
Addition is not possible